

REMARKS

In view of the above amendments and following remarks, reconsideration of the rejections that are contained in the Office Action of October 5, 2007 is respectfully requested.

The Examiner's rejections of claims 44-55 have been rendered moot by the cancellation of these claims. They should not be taken as acquiescence in the positions that have been raised by the Examiner, but rather for the expedience of proceeding toward the allowance of this application.

Remaining claims 56-62 were rejected by the Examiner as being unpatentable over Klein, U.S. 5,970,243 in further view of "applicant's choice of which specific industrial process is performed."

By the above amendments, independent claim 56 has been replaced by claim 63. The limitations of claim 63 correspond largely to those of prior claim 56, but the following should be noted. The claim particularly recites that the controller is configured to store the new control program that is received through the communications circuit in a buffer. Further, the controller is configured to store the new control program, received through the communications circuit and stored in the buffer, in the memory so as to be executable by the processor.

Dependent claim 57 has also been canceled, and remaining claims 58-62 have been depended from new claim 63.

According to the present invention, a controller is configured to determine the time when the control program can be changed, store the control program in memory so as to be executable by the processor in response to the determination, and also has a buffer for storing the control program. The control program can be temporarily stored in the buffer and then stored in the memory from the buffer. This enables the processing time to be divided between times that are suitable for transmitting the control program, and times that are suitable for storing the control program. This avoids interfering with the operation of the semiconductor manufacturing system, further, over a long period of time. This enables the new control program to control the controller without any change in temperature conditions, pressure conditions and other various semiconductor production conditions. It further ensures that the semiconductor production processing maintains the same

quality without being affected by conditional changes that could have a critical effect on the product quality.

Klein discloses a Programmable Logic Controller (PLC) that is used widely in industrial equipment. It is connected to a central control computer, and the control program of the central control computer is changed on-line. While Klein describes changing the program and receiving data from various sensors relating to industrial processes, it simply is a description concerning the central control computer monitoring a PLC or the like, corresponding to a control server (PC) in the present invention.

On the other hand, with the present invention there is a semiconductor manufacturing system for producing a substrate that is to be treated. The controller controls operation of the semiconductor manufacturing system, as claimed, by carrying out a control program that can carry out the recited standby event, boat-up event, ramping-up event, etc. Further, the invention as recited in claim 63 allows the temporary storage of a new control program in the buffer and eventual storage in the memory in response to the determination of the appropriate timing. As noted, this allows the processing time to be divided between those times that are suitable for transmission of the control program, and those times that are suitable for storing the control program. This avoids interfering with the operation of the semiconductor manufacturing system for a long period of time.

As one example, the process event in which the substrate is coated (forming a film on the substrate as recited in claim 63) is determined by the controller as not being the timing for changing of the control program in order to avoid interference with the operation of the film forming process.

In addition, data that was used to carry out the prior control program is held by the controller for the carrying out of the new control program. As such, existing parameters such as temperature change rate, gas flow rate, etc. that were used to carry out the old control program will be retained when switching over to the new control program. The controller employs the existing parameters in executing the new control program, accordingly, as further recited in claim 63.

Klein is silent with respect to the above aspects and features of the present invention. More particularly, Klein does not disclose a controller that is configured to store a new control program in a buffer and then store the control program in memory from the buffer in response to the controller

determining the time when the previous control program can be changed. Klein further does not disclose a controller that is configured to determine that the time in which the control program can be changed is not the process event for forming film on the substrate. Klein further does not disclose or suggest a controller configured to hold prior data used to carry out the previous control program so that the prior data is used in carrying out the new control program.

The Examiner's consideration of the selection of a semiconductor manufacturing system as simply being a design choice is an improper conclusion of law as it is not based on any evidence of record. This is not a design choice, but rather the object of the invention.

The events that are listed are not inherent features "in a manufacturing system." They are features of a semiconductor manufacturing system as claimed, however. They are certainly not present in any manufacturing system.

Again, the Examiner is attempting to dismiss the context of Applicant's invention; however, this is improper. The context of the semiconductor manufacturing system is in fact the object of the invention. The Applicant has recognized the problem in replacing control programs and a controller for a semiconductor manufacturing system, and have resolved this problem by providing a controller that is configured to temporarily store the control program, determine when the control program can be replaced, and then replace it at an appropriate time. The Applicant has further determined the appropriate timing, and provided the controller configured to replace it at such timing, the film forming process being one such timing that the program should not be replaced.

The Examiner's conclusion that in claim 56 "nothing specifies that any of the events are actually implemented. Therefore, any computer system is considered "capable of" implementing events . . ." is legally incorrect. In reciting a controller that is configured to carry out certain operations, the Examiner cannot conclude that any computer system can carry this out. The limitation requires that there be an actual configuration that can carry out the functions. Thus, the Examiner is required to cite a reference carrying out these functions.

An additional set of claims, claims 64-69 have also now been presented. Independent claim 64 corresponds largely to independent claim 63, but includes a specific recitation of additional components of the semiconductor manufacturing system for the sake of additional context. The

claim distinguishes over the prior art cited by the Examiner for the same reasons as independent claim 63.

From the above it is respectfully submitted to be clear that claims 58-69 patentably distinguish over Klein. Indication of such is respectfully requested.

In view of the above amendments and remarks, it is submitted that the present application is now in condition for allowance, and the Examiner is requested to pass the case to issue. If the Examiner should have any comments or suggestions to help speed the prosecution of this application, the Examiner is requested to contact Applicant's undersigned representative.

Respectfully submitted,

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